A RAPID DESK-BASED STUDY:

Private investment in clean energy, inclusive agribusiness and financial inclusion: evidence of impact

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Report Summary

This report, commissioned by DFID, seeks to identify what evidence exists that private investments made in clean energy, inclusive agribusiness and financial services lead to good development outcomes for the poor, especially women – with a particular focus on Asia. This paper is a rapid literature review, before deciding on whether or not to commission more detailed work. DFID is particularly interested in (a) specific suggestions that are made for how to strengthen the investments – for example, through complementary TA – so as to improve the likelihood of strong outcomes for the poor, especially women (b) gaps in the evidence base.

The evidence of links between **clean energy** and good development outcomes for the poor was strong, although the review identified only very few rigorous impact studies. The literature highlighted the need for certain conditions to be met in order for those positive outcomes to be achieved. Financial sustainability was cited as a primary driver of development outcomes. Several studies indicated the importance of public sector intervention in clean energy investment alongside the private sector, to increase provision in poorer and rural areas and to ensure that proper standards are followed in the construction and operation of plants. For small-scale clean energy projects, the evidence indicated the importance of activities to promote their uptake, including financial services. Clean energy was seen to be of particular benefit to women but women are not properly represented in the design and implementation of small-scale clean energy projects.

The evidence of links between **inclusive agribusiness** and good development outcomes for the poor was largely case study-based and anecdotal. The literature identifies many factors affecting the impact of inclusive agribusiness on the poor, including the assets available to the poor in value chains (including land and water) and the process of land acquisition. The literature identified elements of the design of successful inclusive agribusiness including the presence of producer organisations; innovative partnerships to help link producers to markets; pre-commercial investment to transfer assets and building capacity; and giving producers (especially women) a voice in governance and investment. Given the need for careful design, several sources emphasised the importance of 'patient' investment in this sector.

The evidence for the impact of **financial inclusion** on the poor was considerably more robust than in the other two sectors, and many more rigorous impact evaluations were available. The evidence is strong for positive impacts for the poor through several different channels for private investment including savings products, improved banking technology and access to credit. In terms of barriers to successful financial inclusion, there is evidence that farmers' credit constraints are an important bottleneck in expanding agricultural output, and interventions that ease these constraints may be effective in reducing rural poverty and increasing agricultural production. The overall evidence on the impact of financial inclusion is mixed, as some studies show no effect on women while others associate it with positive impacts.

The review showed that there is **very limited robust evidence on the impact** of particular private sector investments in these sectors. The evidence shows clearly that private sector investors, even when supported by development finance institutions (DFIs) rarely report on the impacts of their activities. Some of the more progressive companies and investors report on their reach to beneficiaries and some include an analysis of their beneficiaries by gender, but the review found no evidence of systematic reporting of impact by any private sector investors in clean energy, inclusive agribusiness or financial services.

SECTION 1

Introduction

1.1 Purpose of the review

DFID would like to identify what evidence exists that private investments in clean energy, inclusive agribusiness and financial services lead to good development outcomes for the poor, especially women – with a particular focus on Asia.

The background to this request is that DFID is in the process of scoping the potential establishment of one or more investment platforms through which it would deploy investment capital in order to catalyse private investment in south and central Asia. It's been proposed that the platform(s) should focus on clean energy, inclusive agribusiness and financial services. With that in mind, DFID would like to know what evidence (if any) exists on investing in these areas and whether or not they could lead to good development outcomes for the poor, especially women.

This paper is a rapid literature review, before deciding on whether or not to commission more detailed work. DFID is particularly interested in (a) specific suggestions that are made for how to strengthen the investments – e.g. through complementary TA – so as to improve the likelihood of strong outcomes for the poor, especially women (b) gaps in the evidence base.

We have sought to answer the following questions:

1. What is the evidence on the impact of private investment in clean energy on the poor, especially women, in Asia, and on the factors influencing this impact?
2. What is the evidence on the impact of private investment in agribusiness on the poor, especially women, in Asia, and on the factors influencing this impact?
3. What is the evidence on the impact of private investment in financial services on the poor, especially women, in Asia, and on the factors influencing this impact?
4. Why is there a lack of evidence on the topic in these areas in general?

1.2 Methodology

To source relevant information, the authors conducted tailored searches on Internet search engines and also explored donor and NGO reports, and repositories of international development institutes and think-tanks. The authors checked bibliographies and reference lists from academic papers to find other sources.

The focus of the search was on Asia but where the authors could not identify any relevant material from private sector investments in that region, relevant evidence was drawn from private sector investment in other developing countries.

1.3 Context

This review covers four different types of private sector investment:

(1) Direct commercial investment by private sector companies operating in Asia.
Examples:

- Unilever has supply chains in the developing countries and has worked on improving the access of poor people to its supply chains.
- Large private sector energy companies build, own and/or operate energy generation facilities and may work with governments to ensure access to energy for the poor.
- Commercial banks have operations in developing countries, some of which enable access to financial services for the poor.

Some of these commercial companies are developing pro-poor or gender-specific products and services because they have identified a commercial niche in that area or because they want to safeguard their supply chains. But in many cases the commercial companies have decided to develop these products and services, or adapt their supply chains, as part of their corporate social responsibility activities, some of which will not be directed at core business activities.

(2) Development finance institutions investing alongside private sector companies in Asia, directly or through funds.
Examples:

- Asian Development Bank (ADB)'s investments in energy.
  - For example, it made a loan of US$165 million to the Public–Private Infrastructure Development Facility in 2008. One component of this project is to provide a line of credit of $33 million to the Infrastructure Development Company for promoting renewable energy systems in Bangladesh. The company has been financing the setting up of renewable energy systems, such as solar home systems and/or biomass installations, through a microfinance-based, direct sales program. An additional grant of $1.3 million has subsidized the price of solar home systems to end users— rural households with no access to grid electricity.
- CDC's investments in agribusiness in Asia, both directly and through funds
  - For example, in December 2014 it announced a new US$30 million commitment to an investment fund focused on India's food and agribusiness sector. Rabo Equity's India Agri Business Fund 2 ("IABF 2") will invest in growing businesses across the agribusiness industry, such as agricultural input, food processing, rural retail and cold chain storage and distribution companies.
- IFC's investments in many financial intermediaries in Asia.
  - IFC's microfinance and retail payments clients in Asia facilitated about $4.7bn in financing for about 60 million clients. IFC's housing finance clients lent $380m in housing loans to 23,000 homeowners. Its SME Banking clients provided almost $19.8 billion in financing and helped to provide access to finance for about 2 million small and medium business owners.

(3) Impact investment funds raised through individual donations, foundations and other private sector funds, sometimes combined with finance from DFIs.

Examples:

- The Aga Khan Foundation for Economic Development has direct investments in energy, agribusiness and financial services.
- Bamboo Financial Inclusion Fund invests in microfinance institutions and funds serving the lowest socio-economic segments in emerging economies.
- The Small Enterprise Assistance Fund (SEAF) invests in early-stage businesses in emerging markets, including Asia.

(4) Advisory services and other activities supporting the private sector in delivery of a particular outcome:

Examples:

- The Business Innovation Facility works to identify and address constraints in selected markets, providing technical assistance (and some grant funding) to businesses, and others who play a role in these markets, such as local governments or non-governmental organisations.
- IFC provides funding for advisory services to support the private sector, made in the form of grants, in some cases alongside commercial investments.
- The Global Alliance for Clean Cookstoves works with its partners to establish a thriving global market for clean cooking solutions by addressing the market barriers that impede the production, deployment, and use of clean and efficient cookstoves and fuels in developing countries.

The evidence shows that each of these different types of private sector intervention has a different approach to measuring its impact on the poor and women, but that only limited impact data is generated by any of these private sector-facing organisations themselves.

SECTION 2

Clean energy

What is the evidence on the impact of private investment in clean energy on the poor, especially women, in Asia?

2.1 Links between clean energy and development for the poor

There is a broad consensus in the literature that investment in clean energy does have positive developmental benefits for the poor, and for women in Asia in particular, **provided that certain conditions are in place**. This holds true for both large scale investments in renewable energy such as hydropower, wind, and large-scale solar; and small-scale, off-grid solutions such as cookstoves, lanterns, biomass, and community-scale biogas installations.

2.2 Links between private sector investment and benefits for the poor

Evidence from the literature reveals that private sector actors are generally more efficient in delivering or improving energy provision services than are public sector or DFI institutions; however, studies show that the impact of private investment in clean energy should be accompanied by measures from the public sector to ensure that benefits from energy provision accrue to particularly impoverished individuals and those living in rural areas. The positive impacts of clean energy provision to women are increased time, reduced drudgery, greater employment and income, better health outcomes, heightened awareness of gender roles, and female empowerment. However, most of the data surveyed was anecdotal or based on case studies; only a handful of academic studies examined the impact of clean energy investment and provision on women in Asia in particular. There is a strong consensus in both the academic and grey literature that greater diligence should be undertaken across all investor types to measure thoroughly the impact of clean energy investment on the poor, including on women in Asia in particular.

2.3 Factors for private sector clean energy investment to benefit the poor

The literature surveyed broadly concludes that private investment often has pro-poor development impact; however, certain conditions are more likely to ensure that investment will be successful, ensure high-quality provision and maintenance, and reach women, rural areas, and the very poorest populations. For clean energy investment to have positive impact on the poor, **the investment itself must first be successful**. The literature reveals that many projects financed either by private investors or DFIs simply never achieve their intended outcome of increasing energy provision for the poor. For example, the Shell Foundation notes that many of its grantees' projects in small-scale renewable energy never materialised due to a lack of expertise, inadequate understanding of the market, or simply poor execution (Shell Foundation, 2014, p10). A number of shortcomings also lead to failures in investment in on-grid electricity provision solutions (Pueyo, Gonzalez, Dent, and DeMartino, 2013, p12). However, even successful clean energy investments do not necessarily have pro-poor outcomes.

According to the literature, important complementary measures are often necessary in order to maximise the pro-poor impact of investment in large-scale clean energy projects. Several authors note that, without host country government interventions, private investment in on-grid solutions such as electricity may only benefit relatively wealthier individuals and urban areas (Annamalai, Mahalingam, Deep, 2013, p2). Moreover, private provision of electricity can even lead to a decrease in connectivity and service in rural areas without accompanying interventions (Annamalai, Mahalingam, Deep, 2013, p2). Furthermore, if private sector investment in larger scale projects is not carefully regulated, it can lead to wider market distortions and lead to negative externalities for the economy. Such was the case with the Bujagali hydroelectric dam in Uganda, where high investor profit expectations led the operator to charge relatively expensive rates, burdening the private sector with high input costs for energy (Kalinaki, 2015). Pueyo, Gonzalez, Dent, and DeMartino point out that electrification projects' pro-poor impact can be maximised if the following conditions are met: if electricity is fed into the grid system, if the additional supply is made affordable to the poor, if new consumption is used in ways that lead to poverty reduction, and by increasing economic growth (Pueyo, Spratt and DiMartino, 2014, 3). Several studies note that complementary measures such as improved government regulation or public sector-driven incentives to provide electricity access to rural populations help to ensure that coverage and service in these areas are improved as well (Annamalai, Mahalingam, Deep, 2013, p95; Pueyo, Gonzalez, Dent, and DeMartino, 2013, pxii). Pueyo et al. also note that investments in electrification projects are generally more impactful if they are located near poor populations, if they are linked to reliable transmission and distribution networks, if they are able to meet often fluctuating demand, and if they are located in areas with greater potential for income-generating activities (Pueyo, Gonzalez, Dent, and DeMartino, 2013, pxiv). When large-scale investments are made by the private sector, they are characterised by more efficient use of resources (Annamalai, Mahalingam, Deep, 2013, p3).

Similarly, small-scale renewable energy projects are more likely to succeed and have pro-poor impact if they are accompanied by complementary measures to encourage their uptake. Many case studies of successful, small-scale clean energy deployments also highlight the importance of providing business advisory services to clean energy providers as an important enabler of success, but there does not appear to be any empirical study that more rigorously tests this hypothesis. Pfaff et al note that successful projects are more likely to deliver pro-poor outcomes if investors can generate user buy-in and generally employ a long-term approach that focuses beyond the immediate period of the intervention (Pfaff et al, 2014, p9). More generally, complementary services that allow users to use clean energy solutions, such as innovative financial products, also promote adoption of small-scale clean energy solutions (Shell Foundation, 2014, p5).

Apart from the supply of energy to the poor, the evidence shows that there may be negative impacts for the poor arising from the construction of clean energy generating assets such as Hydropower plants. The evidence from the literature shows that where it does not follow good social and environmental practice, private sector investment in clean energy can have negative consequences for the poor. For example, private sector investment in hydropower plants in Vietnam has resulted in displacement of people, poor safety measures and other social and environmental impacts (Ty Pham Huu p35, p 38) which have a disproportionately negative effect on poor and vulnerable people.

2.4 Evidence on benefits of clean energy for women

There is a broad consensus in the literature that access to clean energy leads to pro-poor developmental outcomes, including for women in Asia. The positive impacts can be broken down into two categories: direct benefits and indirect benefits. The direct benefits of using, or switching to, clean energy are: more time, increased access to radio and television, and improved health. Authors note that these benefits accrue to entire households, but some are even more beneficial for women, given that women often spend more time on household chores and tasks such as collecting wood for fuel (Practical Action, 2014, p4). Haves also notes that the health benefits of employing or switching to cleaner forms of energy accrue primarily to women, as they are the ones most often responsible for cooking in developing countries. Hence, women benefit the most from reduced air pollution (Haves, 2012, p6).

Numerous studies highlight the increase in women's free time resulting from a switch to a less labour-intensive source of energy and more time to carry out household chores thanks to the availability of lighting. Pueyo, Gonzalez, Dent, and DeMartino note that electricity reduces the time that women spend on domestic tasks such as cooking, collecting water, and collecting fuel. Haves also cites numerous studies attesting to the similar direct benefits afforded by biogas and cookstove, ranging from approximately 40 hours saved per year to nearly an hour saved each day (Garcia Frapoli et al, 2010; Katuwal et al, 2009; Annamalai, Mahalingam, Deep, 2013, p3). The resulting savings in time translated into time spent on a variety of activities, including employment, income-generating activity, education, leisure and entertainment, and childcare. A breakdown of the studies covering these effects is provided in the table below. Collectively, many of these benefits also lead to increased women's empowerment (Pueyo, Gonzalez, Dent, and DeMartino, 2013, p54).

Study	Country (ies)	Brief summary
ADB, 2010	Bhutan	Household connection to electricity correlates with an increase in the number of schooling completed by girls; increased time devoted to studying for both boys and girls; greater participation by women in household decision making
Banerjee et. al, 2011	Nepal	Household connection to electricity: decreases the percentage women suffering from respiratory and gastrointestinal problems; increases the number of years of schooling completed as well as minutes per day spent studying; increases time in income generating activities and leisure time; increased women independence on decisions regarding fertility and children
Barkat et al, 2002	Bangladesh	Women in electrified households more likely to spend more time on income-generating activities than women in non-electrified households; lower prevalence of son preference, arranged marriages, wage discrimination, and greater empowerment of women in electrified households
Barnes and Sen, 2004	India	Access to electric lighting leads to an increase in the time women spend reading and socialising; decrease in time spent collecting fuel wood
Chowdhury, 2010	Bangladesh	Community electrification increases the probability that women will participate in non-farm work; decreases the amount of time women spend in unpaid work
Costa et al, 2009	Ghana	Community electrification increases the hours women spend fetching water; no significant impact on the amount of time women spend in unpaid work
Clark et al, 2009	Honduras	Cookstoves and biogas plants reduce indoor air pollution and decrease incidence of respiratory health problems, headache, and eye discomfort
Dinkelman, 2011	South Africa	Community electrification increases the likelihood that women will undertake employment
Garcia Frapoli et al	Mexico	Adoption of Patsari cookstove leads to a decrease acute respiratory disease, and eye discomfort; decrease in the number of hours devoted per year to addressing health problems;
Grogan and Sadanand, 2011	Guatemala	Community electrification raises probability of women's employment outside the household; decreases the amount of time women spend cooking; no discernible impact on women's

Study	Country (ies)	Brief summary
		wages
Jensen and Oster, 2009	India	Access to cable TV leads to reduction in spousal abuse, son preference.
Katuwal et al, 2009	Nepal	Installation of stoves and biogas plants leads to a reduction in amount of time women spend collecting fuel wood and preparing dung cake
Khandker et al, 2009	Bangladesh	Household connection to electricity raises the years of schooling and study time of girls.
Khandker et. al, 2012	India	Household connection to electricity increases the hours worked by women; also leads to an increase in school enrolment and the number of years of schooling completed; decreases the amount of time women spend on cooking
Lumampao et al, 2005	Philippines	Electrification leads to an increase in women's time spent working
Matly, 2003	Indonesia, Sri Lanka	Electricity access leads to more time spent by women on income-generating activities; increase in women's time spent socialising and studying; access to television leads to greater knowledge of gender issues
Peck et al, 2008	Various	Switching from kerosene lamps to other sources of energy leads to reduced air pollution and incidence of burns

Sources: Pueyo et. al, Haves, Duncan and Peters, Annamalai et al.

It should also be noted that one study in the Philippines found that the additional availability of light enabled by electricity actually led to women working exceedingly long hours in manual farm labour, as it was assumed that light would allow them to finish their household chores later in the day (Lumampa et al, 2005).

Another set of benefits to women results for their having greater access to radio and television, which enables women to gain greater access to information. This, in turn, leads to changing opinions on women's roles as well as increased awareness of gender issues (Haves, 2012, p4). Studies by Matly and the Asian Development Bank found that television access increased knowledge of gender rights in Indonesia, Sri Lanka, and Bhutan (Matly, 2003; ADB, 2010). Likewise, Barkat et al. note that women from poor electrified households in Bangladesh demonstrated greater awareness of gender issues than women in non-electrified households (Barkat et al, 2002). This increased awareness was manifested in several measures: decreased son preference, decreased likelihood to arrange marriages, decreased wage discrimination, and increased empowerment (measured by knowledge of gender equality issues, female mobility, and participation in household decision-making) (Haves, 2012, p4).

The third set of direct benefits for women resulting from access to clean energy are related to health. Put simply, switching to cleaner forms of energy reduces exposure to sources of energy and lighting that are themselves more likely to cause health problems. For example, Peck et Al note that switching from kerosene lamps to electricity reduces the incidence of burns (Peck et al, 2008). Researchers put comparatively greater emphasis on the benefits of a reduction in air pollution enabled by the use of clean energy. Banerjee et al. found that electricity connections reduced respiratory problems by 3.4% in women in Nepal, while Haves notes that other benefits include lower incidence of eye irritation, headaches, and respiratory problems (Banerjee et al., 2011; Haves, 2012, p4). Garcia Frapoli et al also note the lower incidence of health problems gained from the adoption of cookstoves also resulted in time savings for families that spent relatively less time dealing with the negative health effects of using less clean forms of energy (Garcia Frapoli et al, 2010).

Numerous studies highlight that increased clean energy access could have greater positive impact on women if investments and interventions target women specifically. For example, the Alliance for Clean cookstoves notes that women are underrepresented in cookstove value chains, even though this “could help generate demand, allow more appropriate products to be designed, and increase their adoption and use.” It also recommends providing incubation services and training programs to women to promote them becoming part of these value chains (Practical Action, 2014, p6).

2.5 Gaps in the evidence

The evidence on the impact of clean energy access and gender is perhaps best summarized by Haves, who note that “overall, there is a great predominance of grey literature dealing with energy-gender relationships and strikingly few rigorous impact evaluations.” (Haves, 2012, P.2). Our finding is that this statement, from a publication dated in 2012, is still true today. Indeed, much of the evidence provided by DFIs and impact investors appears to be anecdotal or case-study based. Evidence collected by private impact investors remains relatively “surface-level” and rarely moves beyond the number of women employed or number of women customers of the service(s) and/or good(s) provided.

Furthermore, while the literature above covers certain elements of how clean energy access impacts women, there are hitherto unexplored or inadequately explored gaps which researchers note merit further inquiry, including:

- Which type of private investment (e.g. grants, debt, equity finance) is more successful in enabling or improving clean energy service, or in providing or improving clean energy access to the poor and women in Asia in particular;
- Which type of investor (DFI, private investor, impact investor) is more successful in enabling or improving clean energy service, or in providing or improving clean energy access to the poor and women in Asia in particular;
- Whether advisory services play an enabling role in delivering clean energy access to the poor or are instrumental in improving its pro-poor impact;
- What the benefits for the poor may be from entities whose function is enabled or improved by the provision of clean energy, such as refrigeration or the impact of clean energy on medical institutions providing services to women;
- What is the impact on women in Asia of particular forms of clean energy. The studies we found devote comparatively more attention to electricity and cookstoves than to solar energy, biogas, wind energy, or biomass;
- What the impact of clean energy is in countries which have received comparatively less attention in the academic and impact measurement literature. For example, we uncovered considerably more information for countries such as Bangladesh and Nepal and less for Afghanistan and Myanmar. This is especially important given that so much of the success of clean energy investment is contingent on their being context specific (reference).

SECTION 3

Inclusive agribusiness

What is the evidence on the impact of private investment in inclusive agribusiness on the poor, especially women, in Asia?

For the purposes of this report, we sought evidence from any type of agribusiness which takes into account the needs of the poor, including investment in:

- **large-scale agribusinesses which employ poor people** (if it can be shown that the poor have benefited from the employment in terms of their income and their quality of life
- **large-scale agribusinesses which buy from low-income producers**, providing support where necessary to bring them into the value chain (for example, large food or retail companies)
- organisations such as cooperatives which may buy from poor producers or provide support for their access to market
- **businesses of any size which provide physical inputs** (fertiliser, irrigation, pesticides) to enhance the productivity of poor farmers
- **businesses of any size which provide services** (advice, financial services, market access) to enhance the productivity of poor farmers or their ability to reach the market
- small and medium-sized enterprises offering processing, packaging or distribution services to the poor

Overall, the evidence is thin. The apparent reasons for this are outlined in section 5 below.

3.1 Evidence from companies working with supply chains

We could not identify any evidence of impact reported by companies seeking to include the poor as employees or in their supply chains, although there is evidence of initiatives being take and targets being set. An Oxfam report on 'Behind the Brands' (Oxfam page xx) cites examples of negative impacts of the supply chains of large companies on the poor and argues that many of them hide behind these high-profile initiatives.

3.2 Evidence from DFI investments

The evidence indicates that for most DFIs investing in developing countries, the focus is on:

a) selecting investments in sectors where the route to impact appears to be strong – for example, clean energy, agribusiness and financial inclusion
b) selecting investments in regions with a high incidence of poverty
c) applying environmental and social safeguards to ensure that their operations are doing no harm
d) measuring the direct jobs created by the investment.

DFI investments do not appear to focus on women and very limited evidence was found of any attempt by DFIs to monitor impacts on women.

One source of evidence is a review of the financial and development performance of the agribusiness investments owned by CDC, over the period from 1950 to 2000 – Investing in agribusiness – a retrospective view by Tyler and Dixie. This study analyzes the experience of CDC as an investor in commercial smallholder and estate agriculture and agro-processing in Sub-Saharan Africa and Southeast Asia and the Pacific between 1948 and 2000. – found evidence that larger-scale agro-investments can help to raise large numbers of people out of poverty, but that such outcomes are contingent on a number of factors.

The evidence generated by this study on the development impact of CDC's agribusiness investment is relatively weak and the report recognises the limitations. These arise because the development impact of the investments was not systematically assessed during the period. In particular, the impacts relating directly to the project (employment, taxes, exports, project infrastructure) were recorded but impacts outside the project boundaries tended to be ignored.

The study notes "Perhaps the main weakness [of the assessment of development impact] was a focus primarily on resolving issues within the project boundary (for example, land conservation, pollution control, health and safety standards, employee housing standards) while paying relatively little attention to broader consequences outside (growth of shanty towns for casual labour, project roads providing access to sensitive environments for informal exploitation, impact of promoting smallholder cash crops on household food production and nutrition)" (Tyler and Dixie page 4).

The conclusions on the proportion of investments that successfully achieved development impact (70% of the 57 Asian agribusiness investments analysed) are therefore not robust. Nevertheless, the evidence generated by the report on the agribusinesses analysed throws up some important messages about the conditions necessary for private sector development to generate positive impacts for the poor in Asia, which are explored below. The report does not provide any specific evidence relating to women.

The study also highlights the experience of integrating smallholders into large-scale agribusiness investments (Tyler and Dixie page 6). Evidence from the analysis shows how the sequencing of the initial investment and engagement with smallholders can affect the level of risk that those smallholders assume in participating. Because the risks entailed in start-up or venture investment projects are very high, and because smallholders' ability to absorb risk is generally quite low, exposing them to this level of risk is irresponsible. In the not unlikely event that the investment goes on to fail, the consequences to the outgrower can be catastrophic. Alternatively, when the outgrower scheme is based on a well-established and successful business model in which problems that arose early on in the operation have been effectively resolved, the level of risk is substantially reduced—and in particular risk to the participating outgrower. A number of CDC nucleus estate schemes exemplified this principle.

In addition, the evidence from CDC's report demonstrates that smallholder schemes should not always be considered the most attractive. For example, a smallholder scheme was established in Zambia in 1980 involving development of 1,800 ha of irrigated cane on a compulsorily-acquired private ranch. The scheme successfully managed to raise income for the 140 families settled on the land. Many of the settlers then took on informal labour at low rates of pay and without any of the benefits and protection provided for under national Labour Laws or under ZSC or KSC company policies. Some lived in informal settlements on the edge of the scheme. The report notes that, had the extra land been cultivated as an estate, those regularly working the land would have been entitled to company housing, medical benefits, social security contributions and the protection of labour officers and trade unions (Tyler and Dixie p25).

The report notes the important point that private sector development can only achieve an impact on poverty if the business that is employing people or buying from them is financially viable. The success of the business model is therefore an important driver of development impact. The analysis in the report showed that nucleus estates with smallholders/outgrowers provided the most successful business model, but only for a limited range of industrial crops (oil palm, sugar, tea, rubber), followed by processing. Outgrower schemes worked particularly well in Asia.

In terms of more recent DFI investments, although we found some evidence of impact measurement and reporting, the focus remains on job creation. The evidence that we did identify was principally in the form of case studies rather than a systematic assessment of impact. And many of these case studies tended to report outputs and outcomes rather than the actual impact on the poor or women. There are some isolated examples of control farmers being assessed, attempts made to calculate the revenue increase, and attempts made to measure the impact on women (although no details are provided of the methodology).

The results and impact of an IFC project (reported in their 'Stories of Impact' series) (IFC page 45) to make the agricultural sector more sustainable and resilient in Bangladesh were described as follows:

- 139,000 farmers trained on stress-tolerant and high-yielding seeds varieties (Some on seed use; others on seed production).
- 67 percent of project-supported farmers adopted recommended varieties.
- 14 percent paddy yield increase for project-supported farmers compared to 10.9 percent for control farmers.
- 88 percent vegetable yield increase for project-supported farmers compared to 5.5 percent for control farmers.
- 15 percent revenue increase for project-supported farmers.
- 3,602 farmers produced better quality seeds and linked to seed supply chain; 2,200 of them are women.
- 71.9 percent cumulative increase in lead firms' sales revenue.

However, we found that more of the results were reported as outputs and outcomes, without quantifying the impacts for the poor or for women. For example, the results and impact of a project to improve productivity in the poultry sector in Bangladesh were reported as follows (IFC page 49):

- Trained over 15,000 small and medium enterprises (SMEs) and poultry farmers.
- Sold 11,367 Poultry Workbooks, good practice guides for SMEs and farmers to improve their productivity.
- Facilitated $1.2 million in investment for 16 poultry farms.
- Installed waste to electricity plants at 250 poultry and dairy farms.
- Generated over 6,700 MWh/year of electricity from waste to electricity plants.
- More than 12,000 SMEs and farmers implemented recommendations received from IFC resulting in improved performance for 8,012 entities.
- IFC client companies increased sales by $104 million.

3.3 Evidence from other government-driven initiatives

Evidence from the Business Innovation Facility (BIF) agribusiness portfolio explores the benefits being sought or realised by both the farmers and the company, as shown in the table below (Adapted from BIF page 2). However, quantitative data from these early stage agribusinesses is only just beginning to emerge and is not yet being reported.

Impact	Driving factor	Relevant projects	Examples of farmer benefit
Increasing incomes	Yield improvements	mKRISHI (India)	Farmers using mKRISHI mobile services in India apply the correct fertiliser leading to yield increases.
	Market access/availability	Pran (Bangladesh)	
	Access to information	MCX (India), Eras (Bangladesh)	ERAS soil testing allows farmers to plan their use of inputs more accurately, lowering costs and improving margins.
	Quality/premium prices	Pabna Meat (Bangladesh)	In the Pabna Meat project, quality of beef is improved by utilising improved feed and veterinary care - possible high premiums in future is organic certification is achieved.
Income security	Value Addition Agricultural Management Strategies	mKRISHI (India)	
	Contract marketing	No examples from Asia	
Increasing skills/ capacity	Extension and training	Pabna Meat (Bangladesh)	Pabna Meat offer access to substantial extension services across a range of crops.
	Infrastructure	No examples from Asia	

Table 1 Adapted from BIF

3.4 Evidence from impact investment funds investing in agribusiness

Evidence from agribusiness-focused impact investment funds is a little deeper in some cases, although the best examples we found came from Africa and Latin America rather than from Asia. Also, we found that the impact funds reporting most fully on their impact on the poor tended to be the ones investing most directly in the poor by providing them with direct inputs. However, the evidence of impact from these impact investment funds is also limited: we found evidence of reports that focused most on outputs and outcomes rather than impact. We found evidence that some impact investment funds – for example, **Root Capital** – are aware of these gaps and have started to develop strategies for reporting impact in the future.

Agribusiness investment funds such as **Rabo Equity's India Agribusiness Fund** (in which CDC invests) do not appear to report on their impact. The website lists 5 principles which are designed to ensure that social and environmental issues in the Fund's investments are managed responsibly.

The **Small Enterprise Assistance Fund** (SEAF) invests in agribusiness as well as other sectors, in Asia and elsewhere. Its impact reporting is based on case studies. For each case study, SEAF interviews stakeholders associated with the company—including owners, managers, suppliers, competitors, producers of complementary goods, employees and consumers—to understand better the impact of its investments beyond the more obvious quantifiable socioeconomic indicators. These benefits and costs are estimated in dollar terms and incorporated into a cash flow model, along with the company's financial performance. This combined cash flow model is then compared to the amount invested in the company to calculate the net dollars generated in the local economy for each dollar invested. On average, from the case studies SEAF has conducted to date, SEAF estimates that each dollar invested generates an additional $13 in the local economy.

SEAF also uses the merged social and financial cash flows to calculate an Economic Rate of Return (ERR), which combines the financial rate of return (average annual percent return generated by an investment) with quantifiable social returns. For the case studies conducted to date, the average ERR on SEAF's investments is 83%. (SEAF website)

The **DFID Impact Fund** – a component of the DFID Impact Programme - has started to measure and monitor the impacts of its investments on the poor and on women, where it is possible to gather this data. These investments include some in the agribusiness (and energy) sectors. The Programme Coordination Unit of the DFID Impact Programme has analysed and highlighted the practical challenges of measuring the impact on the poor and on women in private sector investments, in a report produced in 2015 – Tracking reach to the Bottom of the Pyramid through impact investing – a discussion paper.

3.5 Key elements that determine impact

Project design
Oxfam's research has identified four areas where private sector interventions in agribusiness can be strengthened to deliver improved outcomes for the poor. These are (Oxfam page 3):

- empowerment through producer organisations (taking care to ensure that women have representation in these organisations)
- new business models: specialised intermediaries, service providers and innovative partnerships to help link producers to markets
- pre-commercial investment: transferring assets and building capacity
- giving producers a voice in governance and investment

Working with value chains
An IIED report - Under what conditions are value chains effective tools for pro-poor development? – cites a 2010 review which concludes that there are only a limited number of quantitative studies able to demonstrate any impact of donor interventions in value chains on the poor. The authors observe that partnerships with lead firm interventions in particular have less impact than those that work with chains without a lead firm. Furthermore, lead firm interventions focus primarily on business development, with poverty impacts as a mere corollary. The review concludes that "few interventions and theoretical approaches successfully integrate analyses of 'stand-alone' value chains, livelihoods and environmental factors to understand how value chains affect poverty and sustainability". (IIED page 4)

The IIED report draws a number of conclusions from its literature review and analysis, on what factors enable private sector investment in value chains to deliver benefits for the poor (IIED pages 10-14):

(a) *Assets are key to positive participation*
(b) *Beneficial value chain participation tends to be linked to strong levels of natural capital* including size of landholding, access to water, type of crop, level of productivity and other factors.
(c) *Low natural capital may lead poor producers to participate as wage labourers in value chain activities* - A comparison of formal (supermarket) markets and informal

(traditional) markets in Kenya showed that farms supplying to formal markets were on average five times larger than those supplying to informal markets. A lack of access to land often means that poor people participate as workers.

(d) *Improved access to credit and income from value chain participation can lead to increased natural capital*

(e) *High levels of social capital can support links to formalized markets through aggregation and facilitate scale-up* - Evidence has shown that more mature groups (already existing before a market intervention) with strong internal institutions, functioning group activities and a good asset base of social capital are more likely to improve their market situation and take advantage of market opportunities.

Land acquisition

Studies carried out by the FAO in a 2014 report –Impacts of Foreign Agricultural Investment on Developing Countries - suggest that the disadvantages of large-scale land acquisitions often outweigh the few benefits to the local community (FAO page iv). "In countries where local land rights are not clearly defined and governance is weak, large scale land acquisition raises particularly high risks for the local community. These include reduced access to natural resources and the loss of livelihoods, which are likely to generate local opposition to the investment. Even from the perspective of the investor, land acquisition is unlikely to be the most profitable business model due to the high potential for conflict and damage to reputation. Conversely, the studies suggest that investments that involve local farmers as equal business partners, giving them an active role and leaving them in control of their land, have the most positive and sustainable effects on local economies and social development. These inclusive business models need strong external support for supporting farmers and facilitating the investor-farmers relationship in order to succeed. They also require 'patient capital', as financial returns to investment are unlikely to materialize in the first years. Beside the business model, other important factors include the legal and institutional framework in the host country, the terms and conditions of the investment contract and the social and economic conditions in the investment area. Strengthening the governance and capacity of institutions in host developing countries is essential to enhancing the developmental impacts of foreign agricultural investment." (FAO page iv)

The evidence from this report therefore appears to confirm the findings elsewhere that positive impacts for the poor from the agribusiness sector depend on a carefully-managed process of land acquisition, strong external support for farmers and patient capital.

3.6 Evidence on ensuring benefits for women

"What works for women: proven approaches for empowering women smallholders and achieving food security" is a report commissioned by nine development organisations summarising experiences of promoting gender equality in smallholder farming and in rural areas.

Based on these experiences, the report contains the following recommendations for multi-lateral and bi-lateral donors (What works for Women p17):

- Allocate the necessary financial, human and material resources to strengthen gender-sensitive food security and nutrition interventions with priority given to supporting sustainable smallholder farming and gender-responsive essential services in rural areas. Gender responsive budgeting and budget tracking can help to achieve this aim.
- Support more research partnerships involving collaboration among poor farming communities, extension services and agricultural scientists and ensure research

programmes examine what kinds of sustainable agricultural techniques, equipment and crops can most benefit women.

- Introduce a nutritional dimension into agricultural programmes; this could involve increasing the diversification of smallholder agriculture, providing a range of local varieties rich in micronutrients, monitoring nutrition-related outcomes, and supporting agricultural research that is conducted from a nutritional perspective.
- Encourage national governments to develop, implement and monitor gender-sensitive policies and legislation, relating not only to agriculture, food security or nutrition, but also to issues such as property/land rights, access to productive resources, social protection and basic services, and protection from domestic violence and non-discrimination.
- Collect, track and analyse comprehensive sex and age-disaggregated data on food security and nutrition that is timely, accessible and comparable; and promote gendered analyses of food security and nutrition related issues, including - but not limited to - food price volatility, large-scale land acquisitions or “land grabs”, and land titling.
- Support and engage actively with women’s civil society organisations and networks (such as farmers’ groups and women’s cooperatives) and facilitate their systematic inclusion and participation in the development, implementation, monitoring and evaluation of agricultural research, policies and programmes.

3.7 Gaps in the evidence

As with the clean energy review, there were gaps in the evidence on the impacts of private sector investment in agribusiness, particularly around the following questions:

- Which type of private investment (e.g. grants, debt, equity finance) is more successful in enhancing the impacts of agribusiness on the poor, and women in Asia in particular;
- Which type of investor (DFI, private investor, impact investor) is more successful in enhancing the impacts of agribusiness on the poor, and women in Asia in particular;
- Which types of technical assistance are the most important to support the private sector in improving its pro-poor impact;
- How different forms of land tenure in countries in Asia affect the impact of private sector agribusiness on the poor, especially women.

SECTION 4

Financial inclusion

What is the evidence on the impact of private investment financial services on the poor, especially women, in Asia?

4.1 What types of financial services are being considered?

Financial services that reach the poor can take a range of different forms, from formal banking services to individual microcredit and microinsurance services and digital access to financial services through platforms such as M-Pesa. We examined the evidence of impact in each of these areas.

Much has been written about the impacts on the poor, and especially women, of the microfinance investments made in recent years. In this review, we have not gone back to the substantial body of literature on this topic, but sought to draw out more recent evidence.

4.2 Evidence from systematic reviews

A report by the **Consultative Group to Assist the Poor (CGAP) - Financial Inclusion and development – recent impact evidence** notes (CGAP page 2) that, despite the still relatively small, albeit growing, number of randomized evaluation studies (some 25 cited in the report), the evidence suggests that financial services do have a positive impact on a variety of microeconomic indicators, including self-employment business activities, household consumption, and well-being.

The report notes (CGAP page 3) that most of the studies to date provide mixed evidence on the impact of microcredit specifically on important measures of household welfare such as an increase in consumption or income in poor households over the typically relatively short time horizon studied.

An update of a study in Hyderabad which provides one of the first, longer-term results by going back to borrowers after three years, also did not find later-stage improvements in welfare as a result of access to the initial microcredit. There was no evidence of improvements for longer-term welfare indicators, such as education, health or women's empowerment.

This report also cites recent experimental evidence suggesting that greater flexibility in product design could result in improved impacts. When borrowers were given a two-month grace period before their first loan payment, they diversified their inventory, were more likely to purchase durable assets, and had higher profits three years later. Although default rates increased somewhat, the patterns indicate that the more flexible repayment structure encouraged productive risk taking.

In the case of the provision of appropriate savings products for the poor, the results of studies show a clearer link to welfare improvement than for microcredit (although the report notes that there are fewer of these studies).

The studies cited in the report also indicate that insurance is an attractive mechanism for reducing the vulnerability of the poor to shocks, but the evidence shows a very low level of take-up in these schemes. The report notes (CGAP page xx) that key barriers to take-up, such as a lack of trust and liquidity constraints, have to be addressed if microinsurance is to meet its full potential to help the poor.

The report also cites evidence that financial access improves local economic activity (CGAP page 5). For example, in Mexico, research showed that the rapid opening of Banco Azteca branches in more than a thousand Grupo Elektra retail stores had a significant impact on the region's economy, leading to a 7 percent increase in overall income levels relative to similar communities where no Banco Azteca branches had been opened. Households were better able to smooth consumption and accumulated more durable goods in communities with Banco Azteca branches.

A systematic review of the evidence was undertaken in a 2012 report **Does poor people's access to formal banking services raise their incomes?** This review covered formal banking services as opposed to the more informal microcredit provided by NGOs. The first point to note is that the authors of this paper were able to draw on a substantially larger and more rigorous body of evidence than researchers in the other sectors of clean energy and agribusiness. In fact, the authors were able to apply a quality control process to the studies included in the review. Studies were excluded if they lacked:

- clarity in the description of the program, data, methods and/or research design;
- appropriate methodology for sampling, data collection and analysis;
- control and treatment groups which, where applicable, were properly assigned and without systematic differences or differential attrition;
- acceptable strategies for causal identification and controls for omitted variables in case of non-random assignment to treatment and control groups;
- a sound process ensuring accuracy of the estimated effects. (Pande et al page 22)

The fact that the authors were able to use this quality control process provides a good indication of the much greater availability of evidence in this sector than in clean energy or agribusiness, where it seems difficult to gather evidence of even a very basic nature.

The systematic review came to the following conclusions:

- offering new savings products can increase income by allowing households to accumulate assets
- improving banking technology has the potential to increase income by allowing households to smooth consumption and accumulate savings
- access to credit is associated with higher agricultural incomes and increased and/or smoother consumption for rural farming populations. (Pande et al page 1)
- regarding public sector investment, state-led expansion of the banking sector in rural areas can reduce rural poverty, increase rural wages, and increase agricultural investment

The report found that innovations in savings products and improvements in banking technology may be particularly effective. And, in terms of barriers to successful financial inclusion, it notes that farmers' credit constraints are an important bottleneck in expanding agricultural output, and interventions that ease these constraints may be effective in reducing rural poverty and increasing agricultural production.

4.3 Evidence from impact investment funds

Although the systematic reviews are important to identify robust evidence, we were also keen to review the evidence from private sector investment funds on their own impact. As noted in the section on agribusiness above, many impact investment funds recognise the need to demonstrate their impact (rather than their outputs and outcomes) but are operating with logistical and budgetary constraints.

For example, to try to capture its impact, **Bamboo Financial Inclusion Fund** uses a logical framework approach and establishes an Impact Map for each investee company. This allows Bamboo to monitor the total number of beneficiaries /customers reached and their socio economic profile -income level, gender, location, etc. But they recognise that it is a significant challenge to infer impacts from this data. Bamboo defines its approach as follows - "We take a pragmatic approach to this problem and, together with our investees, define evidence-based assumptions that allow us to envision the impact of the intervention, yet we cannot respond to the counterfactual (what if) question. The assumptions are based on client surveys, research, interviews and observation. We include them in the impact map and fine tune these assumptions to reflect new learning." (Bamboo page 5). Bamboo notes in its Impact Report "As an industry, we stand to win from collaborating further with peer investors and development organizations and academia to define evidence-based impact assumptions" (Bamboo page 6).

Lok Capital has monitored and reported various metrics relating to the beneficiaries of its products. Its latest Impact Report provides the following metrics:

- Our companies have 6.8 million customers. 91% of beneficiaries are women.
- Our companies employ 21.5 million people, of which 20% are women
- Our financial services companies have disbursed Indian Rupees 319 billion of loans since they started operations (Lok, p18).

The measurement of beneficiaries of these private sector services is an important step towards gathering evidence of impact, although it is clear that the private sector organisations (even funds established specifically to generate impact) do not have robust processes in place for measuring how their activities impact on the poor or on women.

4.4 Key elements that determine impact

A specific focus on digital payments

Much of the evidence that we examined pointed towards the important role of digital payments in financial inclusion. A 2013 report by the Gates Foundation's Financial Services for the Poor programme examined the payment system economics and identified two major indicators that digital payments can play a major role in financial inclusion.

- Even in developed markets, providers have significant potential to reduce costs in existing structure by 20%-50%, using multiple methods from different payment systems. Research shows that the drivers of cost vary widely across systems, and there are numerous approaches for reducing operating costs throughout the systems. Lower costs will expand consumer reach.
- Innovations offer increasing potential for payment system improvements. Payment system innovations across markets are continuously developing, expanding the potential for improvements as new technology and business models emerge. Mobile money in East Africa and mobile phone-based card readers (both digital payment solutions) are two examples that have promising applications to further reduce provider cost barriers as well as extend reach to lower income consumers. Together,

these indicators show us that payment system providers have the ability to lower costs, expand margins, and broaden services (Gates page 9).

4.5 Evidence on what works for women

The findings relating to the impact of financial inclusion on women appear to be mixed. In their systematic review of the evidence, Stewart et al note that "While some reviewed studies targeted women specifically and others disaggregated outcomes by gender, there is not enough evidence to allow us to conclude whether financial interventions targeted at women are more or less effective for them." (Stewart et al 2012)

Some studies - for example cited in a UN paper on Empowerment of Women and Gender Mainstreaming in Rural Microfinance - report evidence on positive impacts of financial inclusion interventions on women, measured through various indicators such as access to consumption, health care and contraception, improved decision-making power and better spatial mobility, access to property, and a decrease in domestic violence. The same paper cites other studies which point out a number of negative consequences, both within households and on a wider scale: for example, the impact on gender equality is unclear.

The evidence points to the importance of distinguishing between different financial products in order to assess the value of financial inclusion to women, since microcredit for consumption and for business have very different implications for women.

The findings of several studies (for example, Swamy 2014) have established that women use the resources gained through access to finance in ways that improve that family well-being and contribute to significant increase in savings levels of the households. Further, these significant increases are largely attributed to the decision making influence of women, so gender matters in the impact of the programmes for the poor.

4.6 Gaps in the evidence

Substantially more evidence exists in this sector on the impact of financial inclusion on the poor, especially women. The experience with microcredit, which received substantial private sector investment and has been criticised for prioritising profits over serving its poor customers, has been the subject of many studies (see Stewart et al, p1). The Grameen bank model, which was targeted at women borrowers, has also come under much scrutiny. The review appeared to confirm the gaps identified by a systematic review undertaken in 2012 (Stewart, 2012): this called for studies that contrast interventions targeted at women with those that are not, studies that assess whether combining micro-credit, microleasing and micro-savings with other complementary interventions is more or less successful, and specific studies on micro-leasing.

SECTION 5

Reasons for gaps in impact measurement

Is there any evidence from the review on the reasons why there are gaps in impact measurement?

The review did not identify any specific research carried out into the reasons for the low level of impact measurement among private sector organisations and DFIs. However, the evidence indicates that the following factors are at play:

- There is no demand for impact reporting by private sector companies because any initiatives they take in this area are interpreted positively by most observers, without the need for the companies to prove the impact.
- DFIs have tended to make the simplifying assumption that, provided that environmental and social safeguards are in place, the positive impacts of job creation will be enough to demonstrate the impact of their interventions.
- Detailed impact assessment can be very costly and often there are problems with counterfactuals and attribution. The benefits to a private sector investor of gathering this detailed impact data on the depth of impact for beneficiaries are therefore often not considered proportionate to the cost (particularly in the light of the two points above).

SECTION 6

Conclusions

The evidence on the impact of private sector investment in clean energy, inclusive agribusiness and financial inclusion on the poor, especially women, in Asia, is limited. The handful of robust impact evaluations that do exist indicate that private sector investment in these sectors can deliver positive impact for the poor and for women, but that there are additional factors which need to be in place to ensure that these interventions do indeed reach the poor. The evidence indicates that many of these factors are determined by public sector investment alongside the private sector to provide technical assistance in developing value chains, providing services and supporting new partnerships; or to support the deliberate expansion of access to goods or services to the poor.

The evidence also showed that the focus for many private sector investments is on social and environmental safeguards to avoid negative impact. While this is an important element to protect the poor from bad social and environmental outcomes, it means that the focus for many of these investments is on managing the risks, with job creation as the only positive measure of impact.

6.1 Gaps in the Evidence, and Recommendations

(a) The gaps in the evidence indicate a need for more studies:

Clean energy
There is a general lack of rigorous impact and quantitative evidence that speaks to the effectiveness of and impacts of private investment on clean energy. We have highlighted above that future studies should devote relatively more attention to investigating which types of investment and types of investor in clean energy are more likely to generate benefits for women in Asia. We have also noted that more focus should be devoted to clean energy types, related services, and countries which have hitherto received comparatively less attention.

Agribusiness
There is also a lack of rigorous impact and quantitative evidence on the impact of private sector investment in agribusiness on the poor, especially women. Future studies could usefully focus on how private sector investors can be supported by technical assistance to develop smallholder programmes in a way that shares the risk appropriately and on understanding the key barriers to effective women's participation in producers' associations.

Financial inclusion
There was a larger body of evidence showing rigorous impact assessment in this sector. However, much of it was not conclusive and the nature of the impact was found to vary considerably according to different financial products.

(b) The gaps in the evidence also highlight the need to find ways to engage the private sector in assessing its own impact:

Supporting private sector investors in monitoring, measuring, understanding and reporting their own outputs, outcomes and perhaps ultimately impacts will generate important data and will enable more rigorous evaluations over time. Private sector organisations may not be in a position to undertake public-sector style evaluations at their own expense. But wider impact evaluation programmes funded independently but in partnership with the private sector companies, and undertaken in a practical way, will enable greater clarity about the types of private sector investment which are generating the greatest impact on the poor, especially women, in Asia.

Given the constraints that private sector organisations operate under, a particularly useful area for further work would be to consider how existing evidence (which exists at least to some extent according to the systematic reviews cited above) can be used to flesh out reasonable assumptions which enable more complete (even if not academically rigorous) impact reporting by impact investment funds.

Reference	Type of Literature	Research Type	Summary
GENERAL			
Global Impact Investing Network & Dalberg (2015)	Grey Literature	Secondary: review of primary material	This report is a “snapshot” of the impact investing landscape in South Asia that covers six countries in South Asia: Bangladesh, India, Nepal, Myanmar, Pakistan, and Sri Lanka. It notes that DFIs at the time invested 65-95% of the total impact capital in the region. This, combined with their mandate, gives them especially large scope for impacting the impact investment climate in South Asia. It also provides a summary of the type of metrics / impacts measured by most impact investment funds, noting that most remain relatively “high-level,” e.g. jobs created, income generated for a family, number of products sold. In terms of women-specific metrics, it rarely is measured in more detail beyond number of women employed or number of female customers. Metrics exist on measuring social / developmental impact, but impact investors do not use any single measure, preferring instead to define measurements on a case-by-case basis.
The Impact Programme (2015)	Discussion Paper	Secondary	This report discusses the challenges of measuring impact on the poor, including the difficulty of defining the poor, counting beneficiaries and measuring income uplifts.
CLEAN ENERGY			
Aga Khan Development Network (2015)	Grey literature	Primary Case study (interview based)	In order to build on understanding of energy provision in the Afghan Badakhstan region, the Aga Khan Development Network carried out qualitative interviews with 37 people in Bashor in Tajikistan. The document summarises interview results and noted that women in particular benefitted from more time, increased safety, and less drudgery by devoting less time to household tasks and alternate energy sources (e.g. via collecting wood).
Annamalai, T R, Mahalingam, A, and Depp, A (2013)	Secondary Literature review, meta analysis, synthesis of data	Secondary: literature review	This review of 67 studies seeks to answer the question: What has been the impact of private sector participation of electricity, telecom, and water services? From a thorough review of the literature, it finds that private sector participation does not considerably impact access and quality. Generally, it finds that most often the positive impacts of electricity investment are improvements in product and service quality. However, the conclusion is more nuanced

Reference	Type of Literature	Research Type	Summary
			regarding provision. In this regard, the study finds that private sector provision may even lead to a decline unless investment is accompanied by public sector involvement which actually encourages the spread of electricity to rural areas.
Duncan, Jessie and Peters, Sophia (2015)	Grey literature	Primary (analysis) Secondary (literature review)	This paper has a two-fold purpose: first, it reviews investment into clean energy across the developing world to date. Second, it makes a case for investing into other clean energy sectors aside from those which have been mainly invested in to date – cook stoves and residential solar power. It combines in-house analysis with a light-touch literature review to discuss the impact of renewable energy investment to date and encourage investment into other forms of renewable energy. In terms of gender impact, it cites two studies which note that electricity access encourages women's employment in Nicaragua and South Africa.
Haves, Emily (2012)	Grey literature / Academic	Secondary Literature review	This paper reviews hitherto literature to date that examines the impact of energy access on women. It concludes: • There is lots of grey literature on energy access for women, but little rigorous impact assessment • The first positive effect on women is more time • A second impact is more time for socialising and leisure • Third impact: Improved street lighting led to increase female school enrolment, according to a Cecelski et al study in 2005 which founds this to be the case in Tunisia • Fourth impact: Increased health and safety for women • An important impact is increased women's empowerment, enabled by exposure to television and radio. The study also examines the impact of biomass cookstoves and biogas plants on women's health. It summarises literature which concludes that switching to these 'cleaner' forms of energy cuts air pollution significantly and thus augment respiratory health and decrease eye discomfort and headaches. Improvements in health were also linked to time savings. This was found by Garca Frapolli et al (2010) in Mexico, who found that families using the Patsari stove saved 40.6 hours per year thanks to better health. Numerous studies also linked time savings with a reduction in the time and energy used to cut and gather fuelwood.

Reference	Type of Literature	Research Type	Summary
			The increased income generated by time-saving and income-generating activities can also foster gender equality. This was the finding of a Kabeer 2002 study in Bangladesh.
International Finance Corporation (IFC) (2014) – Climate Change	Grey literature	Primary Review of IFC portfolio projects relating to climate change	This report profiles the IFC portfolio relating to investment in projects aimed at combatting climate change. It is broken down into three project areas: those promoting clean energy, those aiming to enhance food security, and those seeking to improve resource efficiency. Relative to the Agribusiness study, this report provides more high-level summaries of IFC involvement to these areas to date and only puts forth several illustrative case studies. It notes that private sector investment in climate change projects is crucial given that investment in climate-related projects was at the time dominated by private investment, which was three times larger than combined investment from other actors.
Kalinaki (2015)	Newspaper article	Primary: informant interviews	Newspaper article that describes the effect of private investment in the Bujagali hydropower project in Uganda. The article notes that high expected investor returns have led to very high prices for consumers and a distortion of the energy market. As a result, the Ugandan government is considering purchasing the dam.
Practical Action (2015)	Grey literature	Primary: • Surveys in 613 Indian households • Focus group discussions with 547 people in India • 52 key informant and semi-structured interviews. • Literature reviews and informant interviews in India. • Workshops in all 3 countries.	This study analyses the impact of clean cook stoves on women in South Asia. It openly states that it was commissioned by the Global Alliance for Clean Cookstoves in order to “build a body of evidence around gender, economic empowerment, in the improved cookstove and fuel sectors within South Asia (particularly Nepal, India, and Bangladesh).” The study focuses on making a case for how women can benefit from clean cookstoves thanks to improvements in health and the time gained from release from gathering fuelwood and biomass materials. It also examines how women can further benefit by inclusion into cookstove value chains. It found that cookstove adoption enabled: • A 28.1% reduction in firewood consumption • A savings of 122 hours per year of time-saving vis-à-vis firewood collection • Fewer respiratory illnesses, but no reduction in health expenditures and work time loss It also finds that women have little involvement in cookstove value chains, and that there has been a lack of effort to promote women’s involvement therein.

Reference	Type of Literature	Research Type	Summary
Pueyo, Ana, Gonzalez, Francisco, Dent, Chris and DeMartino, Samantha (2013)	Academic literature review	Secondary Literature review	This literature review discusses evidence linking electricity generation capacity and benefits to the poor in addition to reviewing policy interventions that maximise pro-poor benefits of electricity provision. Answers four questions: 1) What is the link between increased renewable electricity capacity and higher availability and reliability of supply? 2) What is the link between increased availability and reliability of electricity and actual connection and use by the poor? 3) What is the link between electricity consumption and poverty impacts? 4) What is the link between electricity consumption and economic growth at the macro level? Broadly, it concludes that electricity provision is linked with an increase in women's employment, the total hours of paid work engaged in by women, and an increase in the probability of participating in non-farm, non-household work. It also promotes women's empowerment.
Pueyo, Spratt, and DiMartino (2014)	Grey literature	Secondary Literature review	Following on their 2013 study, Pueyo et. al discuss the measures needed to maximise the pro-poor impact of investments in renewable electricity. Drawing from a review of the literature, they develop a six-stage toolkit that examines: (1) the potential to increase users, (2) communities that will benefit from the improved service, (3) financial sustainability and affordability, (4) the behavioural elements that affect consumption and connection rates, (5) possible productive uses and (6) the potential benefits for businesses and households.
Shell Foundation (2014)	Grey literature	Primary – review of portfolio of grantees	This report describes lessons learned from roughly 15 years of disbursing grants to pioneers of small-scale energy solutions throughout the developing world. It distils findings into six lessons: 1) Pioneers require significant early-stage support 2) Early adopters of modern energy solutions will seldom be the very poorest 3) Innovation throughout the energy value chain is necessary to tackle energy poverty 4) Adoption of innovative, small-scale energy solutions will require new financial solutions 5) Talent development is a critical determinant of the long-term success of energy enterprises 6) Global institutions and energy networks should be created to drive systemic

Reference	Type of Literature	Research Type	Summary
			change. It also notes that there is a general lack of baseline data collection and impact measurement with these types of projects.
Solar Aid (2015)	Impact Report	Primary Review of Solaraid and Sunnymoney portfolio plus stakeholder interviews and surveys	This analysis summarises high-level information on the impact of Solaraid projects, which involve the sale of solar lights to individual consumers. It looks at both high-level, aggregated results as well as individual projects. It puts forth both high-level data such as total number of lights sold, but it also follows up with clients to review direct social and developmental impacts. It notes that it has resulted in positive developmental impacts on women in Kenya (better school enrolment, better educational results, better health).
Terrapon-Pfaff, J, Dienst, C, Konig, J and Ortiz, W (2014)	Academic research	Primary – survey data Secondary – literature review, analysis of national statistics, 23 project and progress reports	This paper synthesis results from 23 project in small-scale clean energy provision across numerous renewable energy sources (hydropower, biomass, wind, solar power) and user needs (productive uses, lighting, food preparation) to determine which factors may lead to their having positive pro-poor results. It concludes that most of the 23 projects had a positive impact. In order to ensure pro-poor impacts, projects need to be considered as more than one-off interventions. Furthermore, pairing such interventions with complementary assistance has proven to have a greater beneficial impact.
Ty Pham Huu (1978)	Academic article	Primary	This report considers the impact of hydropower development in Vietnam, considering the impacts on the economy, the environment and local communities including those who have been displaced as well as those who are affected by the safety of ongoing operations.
INCLUSIVE AGRIBUSINESS			
ActionAid et al (2012)	Grey literature	Secondary Portfolio review	This report commissioned by nine development organisations summarises experience of promoting gender equality in smallholder farming and in rural areas. It reviews the challenges faced by women also provides recommendations to governments on interventions to take to close this gender gap. It also notes in particular that women have more difficulty accessing credit than do men, but it does not look at the impact of private investment in agriculture on women.
Africa Enterprise Challenge Fund (2014)	Annual report	Primary Portfolio review including surveys and interviews.	Describes the impacts of the Africa Enterprise Challenge Fund, a challenge fund working in agriculture, renewable energy, adaptation to climate change, and financial services and information. It provides both high-level aggregate information as well as case studies that draw on interviews and surveys. It notes a few particular impacts on gender from its investments, namely that improvements in access to clean energy have results in better health outcomes and reduced drudgery.

Reference	Type of Literature	Research Type	Summary
Business Innovation Facility (2013)	Grey literature	Secondary Case Studies	This report summarises the experience to date of the Business Innovation Facility's work with agribusiness investments.
Grassroots Business Fund (2014)	Annual report	Primary Portfolio review	This report profiles the investment and advisory service activity of the Grassroots Business Fund, a self-styled 'socially minded investor' operating in Asia, Africa, and Latin America. It captures high-level information of the impact of its investments, but nothing particular to women aside from the number of women employed by its investees or the number of women customers of its investee clients.
International Finance Corporation (IFC) (2014) – Agribusiness	Grey literature	Primary Review of IFC projects undertaken in agribusiness	This document presents 16 case studies of successful IFC projects in agribusiness throughout the world, including numerous in South and Southeast Asia (Vietnam, Cambodia, Philippines, Bangladesh, Nepal). It does not provide an overarching summary of overall results and is rather a collection of case studies.
Liu, P (2014)	Grey literature	Case studies	This report summarises the results of FAO's case studies on the impacts of foreign agricultural investment on host communities and countries. The studies suggest that the disadvantages of large-scale land acquisitions often outweigh the few benefits to the local community. In countries where local land rights are not clearly defined and governance is weak, large scale land acquisition raises particularly high risks for the local community. These include reduced access to natural resources and the loss of livelihoods, which are likely to generate local opposition to the investment. Even from the perspective of the investor, land acquisition is unlikely to be the most profitable business model due to the high potential for conflict and damage to reputation. Conversely, the studies suggest that investments that involve local farmers as equal business partners, giving them an active role and leaving them in control of their land, have the most positive and sustainable effects on local economies and social development. These inclusive business models need strong external support for supporting farmers and facilitating the investor-farmers relationship in order to succeed. They also require 'patient capital', as financial returns to investment are unlikely to materialise in the first years.
Oxfam (2013)	Discussion paper	Secondary Case studies, literature review	Explores the impacts on the poor of the value chains of large food and beverage companies.
Root Capital (2012)	Discussion paper	Summative evaluation	This discussion paper outlines the challenges of measuring impact and proposes a way forward to improve reporting in the future.
Sahan, E (2011)	Discussion paper	Secondary Case Studies and independent	This report examines how market development initiatives can maximise pro-poor outcomes, particularly for women and smallholder farmers. The authors hypothesise that development interventions need to address power imbalances between smallholders vis-

Reference	Type of Literature	Research Type	Summary
		analysis	à-vis larger companies as well those of women vis-à-vis men. Interventions, it claims, can be most effective by employing four methods: 1) supporting pre-commercial investments, 2) giving marginalised groups a voice in governance and investment, 3) supporting producer organisations, and 4) supporting new business models.
Small Enterprise Assistance Fund (2015)	Web page		http://seaf.com/our-impact/our-economic-impact/how-we-measure-impact/ - This is a page on the SEAF website which describes SEAF's impact reporting methodology.
Tyler, G and Dixie G (2013)	Grey literature	Primary: evidence of CDC investments in agribusiness over 53 year period.	The analysis examines the record of CDC investments in estate agriculture, agro-processing, and commercial smallholder farms between 1948 and 2000 in Sub-Saharan Africa, Southeast Asia (only Indonesia is relevant for this paper) and the Pacific. It finds mixed results, but notes that the results can be positive if the right complementary conditions are in place. It does not address the impact of agribusiness on women specifically.
FINANCIAL INCLUSION			
Bamboo Finance (2014)	Annual report	Primary Portfolio review with informant interviews and surveys	This is the annual report of Bamboo Finance, an impact investment fund. It provides both high-level, aggregated results for the fund as a whole and puts forth individual case studies detailing the impact of its programmes. It appears that there is no standardised way of measuring impact of projects; rather, assessment frameworks are created on a case-by-case basis. It also profiles four investees that work primarily with women: SICSA, ASMITHA, SUASTI, and Banco WWB.
Bill and Melinda Gates Foundation (2013)	Grey literature	Independent study using primary and secondary information	As part of the Gates Foundation Financial Services for the Poor (FSP) programme, this report looks at the potential for using digital technologies to promote financial inclusion. It assumes that increased financial inclusion is inherently good for development and notes that women are often more financially excluded than men, but does not discuss the impact of investment in financial services on women.
Consultative Group to Assist the Poor (2014)	Grey literature	Secondary (literature review)	Focusing on financial inclusion, this focus note examines the extent to which poor households lack access to financial systems, summarises recent impact evidence of financial inclusion (on the micro, local economy, and macroeconomic levels), and discusses two areas in which low-cost financial services can create additional benefit. It concludes that financial inclusion is an important component of economic development. Regarding the impact of financial inclusion on women, it finds that: • Access to a commitment savings mechanism had a positive impact on female

Reference	Type of Literature	Research Type	Summary
			empowerment in the Philippines, particularly with women who had little decision-making power at the start. • Recipients of cash transfers delivered through mobile phone devices achieved savings, which in turn resulted in diversification of expenditures and the growing of more cash crops, in particular cash crops by women.
Duvendack, M, Palmer-Jones, R, Copestake, J G, Hooper, L, Yoon, L, Rao, N. (2011)	Systematic review	Secondary: literature review	This report critically reviews hitherto existing literature on microfinance to date in order to determine whether it has had an impact on alleviating poverty. It finds that: no clear evidence exists that microfinance has had positive impacts, many studies that did find a positive impact suffer from weak research designs and poor data, and that the robustness of claims that microfinance empowers women and alleviates poverty should be reviewed more thoroughly. They find no robust evidence on the positive impacts of microfinance on women's status. Generally, past studies relying on qualitative information have presented the results of microfinance on women more positively than quantitative studies have.
Gobezie G (2011)	Discussion paper	Secondary Literature review	Empowerment of Women and Gender Mainstreaming in Rural Microfinance Paper prepared by: Getaneh Gobezie ACDI/VOCA Ethiopia
Lok Capital (2014)	Annual report	Primary Portfolio review	This annual report describes the work of Lok Capital, a manager of two impact investment funds that invest in India. As with the other annual reports, it mainly focuses on reporting 'high-level' information such as number of investee employees, number of investee customers, and so forth. It also provides a number of case studies, including a few that are primarily focused on women: Uttkarsh Finance, Equitus holdings, Ujjivan, Surayday, and Sewa Grih Ran.
International Finance Corporation (2014) – Financial Inclusion	Grey literature	Primary Review of IFC projects undertaken in agribusiness	Similar to the IFC Agribusiness study, the financial inclusion report provides a collection of case studies illustrating the IFCs involvement in this sector, which involves providing direct finance coupled with advisory services. It profiles several projects in South Asia (India, Sri Lanka, Nepal, Bangladesh), but does not provide aggregated or systematic impact information.
Pande, R, Cole, S, Sivasankaran, A, Gautam, G B, Burlacher, K. (2012)	Systematic review	Secondary: literature review	This report cites several academically rigorous studies of the links between access to formal banking services and incomes of poor people and finds important links.
Swamy, V (2014)			World Development Volume 56 April 2014

Reference	Type of Literature	Research Type	Summary
			This report explores the gender dimension of financial inclusion and its economic impact on poor households
Stewart R et al (2012)	Systematic review	Secondary: literature review	The authors look to answer the following question: Do micro-credit, micro-savings and micro-leasing serve as effective financial inclusion interventions enabling poor people, and especially women, to engage in meaningful economic opportunities in low- and middle-income countries? A systematic review of the evidence. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London

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